CLEAN ENERGY SYSTEMS | Schlumberger

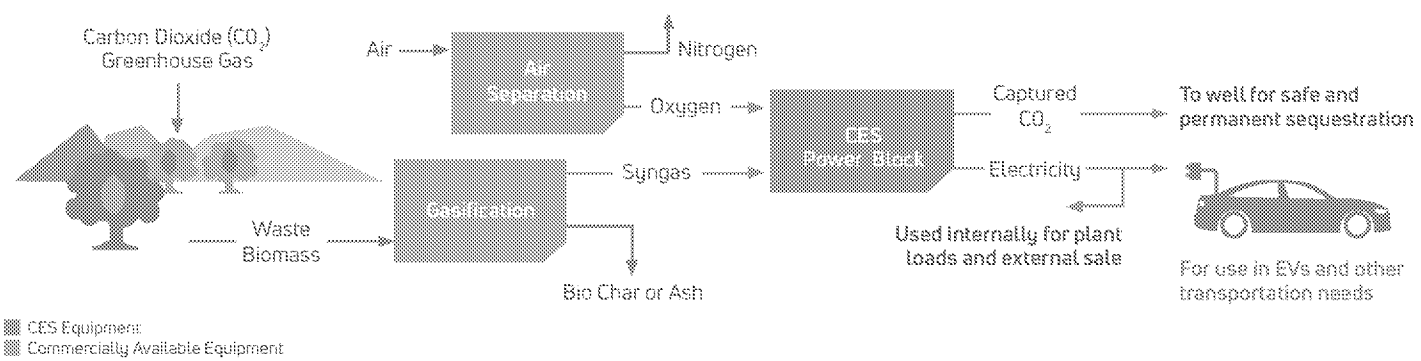
MENDOTA BIOENERGY WITH CARBON CAPTURE AND SEQUESTRATION PROJECT (BECCS)

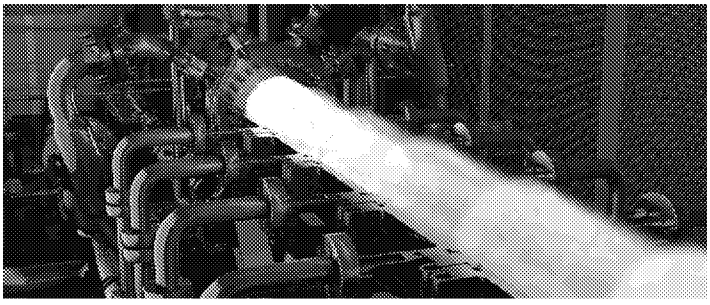
Clean Energy Systems and Schlumberger New Energy introduces a groundbreaking carbon negative BECCS project that converts biomass to electricity and uses carbon capture and sequestration technology

Project Description

The Mendota Bioenergy with Carbon Capture and Sequestration Project (BECCS) will deliver produced electricity to the California grid while capturing CO_2 before it is released into the atmosphere. The revitalized biomass plant gasifies waste biomass fuels to produce a synthesis gas. This "syngas" is used by Clean Energy Systems' (CES') proprietary oxy-combustion technology to produce electricity while capturing CO_2. By using biomass fuel that consumes CO_2 over its lifetime, and by safely and permanently storing produced CO_2 generated during power generation, the process can result in net-negative carbon emissions.

SIMPLIFIED SCHEMATIC





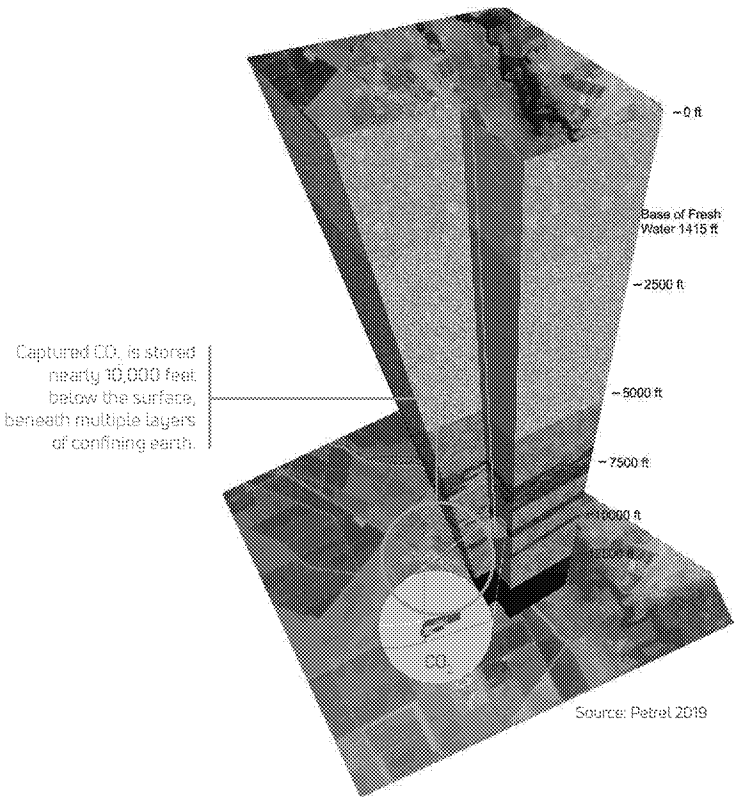
CES oxy-combustor

What is Carbon Negative Energy (CNE)?

CNE is a process that removes existing carbon from biomass waste while producing renewable fuels and/or power that is then captured and permanently stored – which can result in net-negative carbon emissions.

What is Carbon Capture & Sequestration (CCS)?

Carbon Capture and Sequestration (CCS) is the process of capturing carbon dioxide (CO_2) either to prevent it from entering the atmosphere or to directly remove it from the atmosphere and storing that CO_2 in the subsurface for an extended period of time. Schlumberger, the world's leading provider of technology to the global energy industry, is developing the sequestration site underneath the plant.

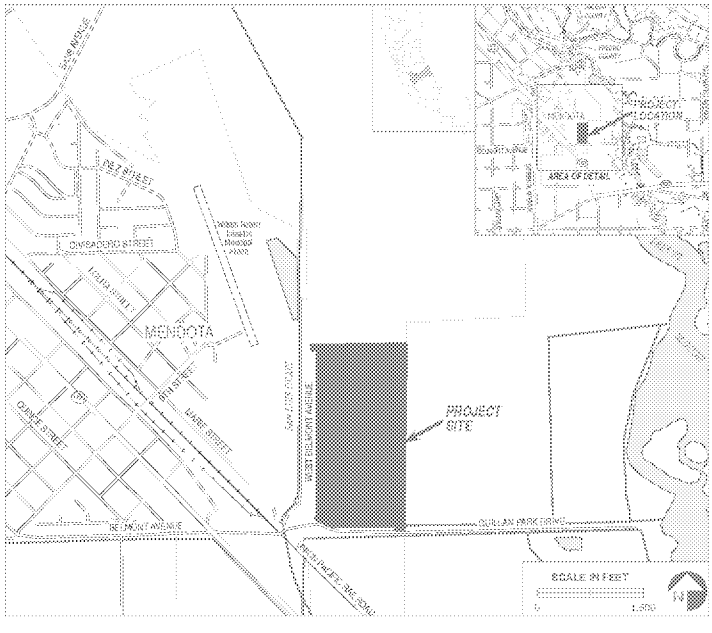


Community Benefits

- Revitalizes an idle biomass plant creating the potential for economic growth and local jobs during construction and through the 20-year life of the project.
- The completed facility will help improve air quality in the Central Valley by using approximately 200,000 tons of agricultural waste annually, in line with the recent California Air Resources Control Board plan to begin phasing out almost all agricultural burning in the Valley by 2025.
- This BECCS project is expected to remove about ~300,000 tons of carbon dioxide (CO2) per year – equivalent to the emissions emitted from electricity usage by more than 65,000 U.S. homes.
- Contributes to Fresno County and Mendota city tax revenue base.
- Brings recognition to the City of Mendota as the location of a groundbreaking carbon negative BECCS project, built to contemporary standards of construction, appearance, and low water demand.
- Supports California's lower-carbon goals and helps advance toward the global ambitions of the Paris Agreement.

Project Location

The Mendota BECCS project is located in the heart of California's Central Valley, on the west side of Fresno County.



Clean Energy Systems is a global leader in the development and deployment of carbon reducing energy systems:

- Uses proven aerospace technology transferred to clean energy production
- Over 30 patents on oxy-combustion technologies and cycles
- Strong strategic investors and partners

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